

Art Unit: 2852

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Cancel claims 1 to 16.

17. An apparatus, comprising:

an electrically conductive trace on a substrate, the electrically conductive trace including first and second materials, the electrically conductive trace formed by

applying photo-thermal energy to a selected area of a first layer of the first material disposed on a second layer of the second material; and

diffusing a portion of the first material into a portion of the second material responsive to said applying.

18. The apparatus of claim 17, wherein:

the substrate is part of one of a semiconductor package, a printed circuit board, and a die.

19. The apparatus of claim 17, wherein:

the second layer includes metal.

20. The apparatus 17, wherein:


the electrically conductive trace includes a copper tin alloy.

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21. The apparatus of claim 17, wherein:

the electrically conductive trace is between about 10 microns and about 20 microns in thickness and between about 27 microns and about 35 microns in width.

22. The apparatus of claim 17, further comprising:

 an inter-layer dielectric material electrically isolating the electrically conductive trace.

23. The apparatus of claim 17, wherein:

the second material includes copper.

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24. The apparatus of claim 17, wherein:

the first material includes tin.

25. The apparatus of claim 17, wherein:

the first material includes an organic material.

26. The apparatus of claim 17, wherein:

the first material includes a conversion coating material.